

Renin Angiotensin Converting Enzyme 2 and COVID-19: Prevention and Treatment

Dear Editor,

The 2019 novel corona virus (SARS-CoV-2) has already taken on pandemic proportions, having infected more than seven million people in 213 countries. The increased prevalence of the disease as well as involvement of the angiotensin-converting enzyme 2 (ACE2) have suggested to consider its role in corona virus infection diseases-2019 (COVID-19).

ACE2 is a type-I membrane-bound glycoprotein that cleavages angiotensin I (Ang I) into Ang 1-9 and Ang II into the Ang1-7. Organs such as the heart, liver, kidney, and especially the lungs play a greater role in COVID-19 mortality while a higher expression of ACE2 was detected in these organs. SARS-CoV-2 utilizes ACE2 as an entry receptor in ACE2-expressing cells, and actually inhibit the physiological activity of ACE2.^[1] The ACE inhibitors and AngII type-I receptor blockers (ARBs) are the simple choice to increase ACE2 expression, and the binding of soluble ACE2 with SARS-CoV-2 spike may reduce the viral load,^[2] and cellular blocking of ACE2 act as pro-inflammatory.^[3] Diseases such as asthma, pneumonia, and influenza are dependent on ACE2 activity,^[4] and ACE2 activators may prevent the lung against fibrosis.^[5] The expression of ACE2 may promote by some vitamins such as vitamins C, D, and B3.^[3] In addition, ARBs, metformin and the drugs containing diminazene aceturate also are suggested to be used as ACE2 activators.^[3,4] Collectively, the relationship between ACE2 and SARS-CoV-2 in the treatment of COVID-19 patients cannot be ignored.

However, the SARS-CoV-2 has spread in our lives and it has no time to go away. Special attention of course, should be paid to the treatment of COVID-19 patients, but prevention by diets and protection should not be forgotten. ACE2 is a good and a logical target, and proper nutrition to maintain the physiological level of ACE2 expression is needed. Proper use of compounds such vitamin C and prevention of vitamin E deficiency that increase ACE2 expression may be important for prevention of COVID-19. In addition, we must keep in mind that the activity of the enzyme depends on sex and age.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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Received: 27 Sep 20 **Accepted:** 04 Feb 21

Published: 25 Jun 21

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DOI:

10.4103/ijpvm.IJPVM_585_20

How to cite this article: Kafami M, Nematbakhsh M. Renin angiotensin converting enzyme 2 and COVID-19: Prevention and treatment. *Int J Prev Med* 2021;12:70.

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